

Session 1

Many Things Come in Groups

Materials

- Large paper (about 15 sheets)
- Student Sheet 1 (1 per student, homework)
- Family letter (1 per student)
- Interlocking cubes (optional)

What Happens

As a class, students make lists of things that come in groups of 2 to 12. Students figure out how many things come in two groups of 2, three groups of 2, and so on, in order to create multiplication problems based on the class lists. Partners then trade problems for each other to solve. Student work focuses on:

- finding things that come in groups of certain sizes
- recognizing multiplication situations
- posing and solving multiplication problems

Activity

Naming Things That Come in Groups

Briefly introduce this activity and provide examples to prompt thinking:

Many things come in groups. Some products are always packaged with the same number of items. Art and office supplies (pencils, paper clips) and some foods (frankfurters, eggs) often come in groups. Many things in nature (petals on a flower, toes on a cat) come in certain numbers. What things can *you* think of that come in groups?

Start a list of things on separate pieces of large paper for each number from 2 to 12, and for any other numbers that students mention two or more times; 24, 60, or 100, for example. Under each number, record a few of the students' ideas.

2	3	4	5
eyes ears twins shoes mittens	juice boxes clover leaves	legs on a dog seasons in a year quarters in a dollar	fingers on one hand toes on one foot senses school days in a week cents in a nickel

On each list, leave space to add new ideas or examples. Also leave room for posting a list of multiplication equations for that table, which you will be writing as a group in Investigation 4. Post the lists in numerical order where students can see them, perhaps temporarily on the chalkboard. Save the lists for use in the next session.

❖ **Tip for the Linguistically Diverse Classroom** In situations like this throughout the unit, add small drawings for the listed items as needed to enhance comprehension. Students with limited English proficiency can contribute ideas by adding their own small sketches to the chart.

Activity

To help students become familiar with situations where multiplication could be used, pose a few questions that can be solved using multiplication. Base your questions on items from the class lists. For example:

Asking Multiplication Questions

$$\begin{array}{r} 5 \times 4 = 20 \\ 4 \times 5 = 20 \end{array}$$

There are usually five toes on a person's foot. How many toes would there usually be on four feet?

There are four quarters in a dollar. How many quarters are in three dollars?

Writing and Solving Multiplication Questions After students have listened to and answered a few of your questions, ask them to make up a question of their own. They can use items from the posted lists or think of new ones.

Every student should write a multiplication question like the examples you just gave. When they are finished, have them trade questions with a partner. Partners then copy each other's problem onto their paper and write solutions to both their own and their partner's problem.

❖ **Tip for the Linguistically Diverse Classroom** Have students include drawings for the items in their problems as an aid to comprehension.

Partners then check each other's work. If they want, students may use cubes or other small objects as counters.

After students have had time to develop and solve their multiplication questions alone and with a partner, bring the class back together. Invite a few volunteers to read their questions aloud for the class to solve.

Activity

Brainstorming About Groups

Working with partners or in small groups, students spend the rest of the class time brainstorming more things that come in groups. Encourage them to think of things in groups of 2 to 12. They may use larger numbers only if they can think of more than one item in each grouping. Provide some time for students to add the new ideas to the class lists.

When students have added their new ideas, bring them together to talk about any observations they might have about their lists. Ask questions such as these:

What are the most common numbers that things are grouped in? Which numbers were hard to find? Why do you think some numbers occur more than others?

Challenge students to try to think of something for every one of the numbers from 2 to 12 over the next few days.

Note: Be sure to save the class lists of things that come in groups for use in the next session.

Session 1 Follow-Up



Homework

Things That Come in Groups Send home the family letter or *Investigations* at Home. For homework, students talk with people at home about things that come in groups. They list some new things they think of or find, either at home or at a store, writing down the name and the quantity of each item on Student Sheet 1: Things That Come in Groups. If the item is packaged, they might include the brand name. Encourage them to try to find items in different amounts, especially some of the hard-to-find numbers, such as things that come in groups of 7 or 11. Remind students to return this homework tomorrow.

♦ **Tip for the Linguistically Diverse Classroom** Students may list items in their native languages and draw pictures of the things they find that come in groups.